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ENGINEERING OPERATIONS COMMITTEE
MEETING MINUTES
November 3, 1994, 9:00 A.M.
EXECUTIVE CONFERENCE ROOM

Present:	R. A. Welke	C. J. Arnold	R. E. Maki
	G. D. Taylor	D. Spangenberg	G. D. Dobie
	L. A. Kinney	L. R. Brown	J. W. Reincke
	J. D. O'Doherty		
Guests:	W. C. Turner	I. Patel	

OLD BUSINESS

1. **Approval of the Minutes of the October 10, 1994, Meeting - R. Welke**

   Minutes were approved as written.

2. **Follow-Up on Noise From Rumble Strips, Research Project 93 TI-1659 - J. Reincke**

   The data generated by this second study of shoulder rumble strips was reviewed and discussed. The study concludes that interior vehicle noise level increases as the depth increases in the rolled-in-bituminous sections. Two other types of rumble strips, cast-in-concrete and ground-in-bituminous, were also evaluated at one site for each.

   The concrete section performed similar to the rolled-in strips while the ground-in strips produced significantly higher noise levels even though they were only 1/2-inch deep. No sections tested were at the specification depth of one-inch.

   It was noted that looking at depth alone is not the total answer in determining the effectiveness of rumble strips in shoulders. We should look at the effects of spacing and vibration in determining the complete impact on the driver. This is especially critical for large trucks with larger radius tires and higher tire inflation pressures.

   It is apparent that we are not getting what we are paying for, one-inch depth rumble strips. Industry needs to be aware of this situation and we need to better monitor the installation practices.

   ACTION: Research will further investigate the effects of spacing and vibration on the effectiveness of shoulder rumble strips. Construction will make personnel and industry aware of the installation problem and the need to attain the one-inch specification depth.

NEW BUSINESS

1. **Research Center of Excellence (RCE) - J. Reincke**

There are requests pending for establishing two more research centers of excellence (RCE) utilizing State Planning and Research (SPR) funds; a Materials RCE at Michigan Tech and an Infrastructure (Construction and Structures) RCE at the University of Michigan.

In 1993, the EOC approved creation of three RCEs to be established within the university members of the Michigan Transportation Research Consortium. Based on the highest current needs in the nine research focus areas, RCEs were designated for IVHS (established at the University of Michigan), Traffic and Safety Operations (established at Michigan State) and Pavements (under establishment as a cooperative partnership between MSU and UM). The centers, funded at $250,000 per year for five years, were created based on current and projected research needs. In creating the first centers, the EOC acknowledged that there may be others of interest to the department such as transit, materials and structures. However, it was previously decided and reaffirmed at this meeting that certain conditions and information must be ascertained before any further RCEs are approved. The major points of concern are (1) funding - primarily the availability of SPR funds and the requisite matching state funds; and (2) there must be an evaluation of performance and benefits of the first RCEs. At this time, future funding, especially matching state funds, is more unknown than known. The EOC cannot extend further SPR commitments towards new RCEs until funding is assured and the benefits of the current centers are readily documented and established.

ACTION: Jon Reincke will reaffirm the EOC position on Research Centers of Excellence to the requesting universities.

2. **Application of Polymeric Composite Technology - J. Reincke**

The Council of Great Lakes Governors established an agenda to engage the conversion of polymeric composite technology from defense applications to civilian applications, specifically infrastructure problem areas. The department has been informally solicited for interest in participating in the development and demonstration of this technology on Michigan's transportation infrastructure. The Great Lakes Science and Technology Partnership needs to understand our problem areas that might potentially be served by this innovative new materials approach. Potential applications at this time are focused on structural materials. The department will be formally asked about any willingness to participate in demonstration projects and funding research evaluation and monitoring that is warranted.

ACTION: A committee was formed to study and respond to the potential application of polymer composites in Michigan's transportation infrastructure. The committee will be represented as follows: Design (Chuck Arnold), Construction (Glenn Bukoski), Engineering Services (John Davis), Maintenance (Sonny Jadun), Materials & Technology (Jon Reincke, Chair). The committee will present recommendations to the EOC when appropriate.

3. **Recommended Interim Changes for Rigid Pavement Designs - B. Turner**

The Rigid Pavement Study Committee, chaired by John Kelsch, issued an interim report into its investigation of poor concrete pavement performance. The committee is examining the issue and is collecting and correlating data. Several interim recommended changes were developed aimed at improving concrete pavement performance. The two most significant issues are cracks and faults resulting in recommendations aimed at providing a more stable base and shorter joint spacings. Requests for pavement data were sent to Districts 5 through 9, most of this information is pending.

ACTION: The interim report along with its recommendation is accepted. The intent is to go forward in this general direction. The Pavement Selection Review Committee will consider these recommendations for individual designs. The committee will continue its investigation and will review the data gathered from the districts. A final report with recommendations will be prepared and submitted for approval by the EOC.

4. **Pavement Type Selection for EOC Approval, Reconstruction for I-275 (Westbound I-96 Ramp) at I-96/I-696/M-5 Interchange, Oakland County (2.3 Miles) Metro District - C. Arnold/I. Patel**

Decision: Approve the concrete alternative as follows:

12"	Reinforced Concrete Pavement (27' Joint)
12" to 9"	Reinforced Concrete Shoulders
4"	Open Graded Drainage Course (21AA Modified)
10"	Ex. Sand Subbase - Add Underdrains

ACTION: Design will proceed with project development to meet a February, 1995, completion date.

5. **Pavement Type Selection for EOC Approval, Reconstruction for I-275 from Newburg Road, Monroe County to North Line Road, Wayne County (9.5 Miles) Metro District - C. Arnold/I. Patel**

Decision: Approve the concrete alternative as follows:

11"	Reinforced Concrete Pavement (41' Joint)
11" to 9"	Reinforced Concrete Shoulders
4"	Open Graded Drainage Course
3"	Dense-Graded (21AA) Separation Layer
9"	Ex. Sand Subbase - Add Underdrains

ACTION: Design will proceed with project development to meet a March, 1995, completion date.

6. **Pavement Type Selection for EOC Approval, I-94 Reconstruction, from West of Friday Road Easterly to the East of County Road 687 (Eastbound 10 Miles, Westbound 5 Miles) District 7 - C. Arnold/I. Patel**

Decision: Postponed.

ACTION: Bob Welke will convene a meeting within two weeks with District 7 to review project details and address district concerns.

7. **Metro District Bridge Program "Painting" and Zone Painting of Steel Bridges - R. Welke/C. Arnold**

At issue is the new policy regarding zone painting of steel bridges. Some painted bridges, especially in the northern districts and in rural areas, have sound protective coatings except in a few localized parts of the bridge such as leaky joint areas. Zone painting was conceived to rehabilitate the protective coating system by cleaning and repainting only the most deteriorated parts or zones. More bridges could be done because of the lower cost and zone painting might extend the overall coating life considerably.

In a memo to C.J. Arnold, Design, Metro District opposes this policy citing that all steel bridges in the city of Detroit should be totally painted because of previous neglect. Also, all unpainted A588 bridges should be fully painted.

The EOC acknowledged the need for district input and that bridge painting efforts must be coordinated. The department's Bridge Paint Committee has established criteria for zone painting but has not shared them with the districts.

ACTION: The Bridge Paint Committee is instructed to send their zone painting criteria to the districts for review and comment. District input should be sought by the committee in areas such as Metro where bridges may need individual review.

8. **Update on BAC Summit - R. Welke**

A series of meetings was held with the bituminous industry resulting in a proposed new structure for the Industry/Bituminous Advisory Committee. The proposed structure was reviewed and accepted.

ACTION: The proposed structure is approved.

(Signed copy on file at M&T)
Calvin Roberts, Secretary
Engineering Operations Committee

cc EOC Members
District Engineers

G. H. Grove	G. J. McCarthy	L. K. Heinig	T. Adams
E. D. Winkler	D. L. Coleman	W. C. Turner	D. L. Smiley
L. W. Martin	H. J. Nyquist	R. W. Muller	R. E. Nordlund
L. E. DeFrain	G. L. Mitchell	J. E. Norton	C. W. Whiteside
I. B. Patel	C. G. Cantrell	G. H. Gallup	A. G. Ostensen
J. Kelsch	G. J. Bukoski	R. D. Till	J. Becsey